

**LOUDOUN COUNTY, VIRGINIA
SCOTT JENKINS MEMORIAL PARK
CONTRACT NO. QQ-01594**

SECTION 02230

CABLE SUPPORTED & FABRIC STRUCTURES

1.1 SECTION INCLUDES:

Prefabricated fabric covered metal shade shelter/gazebo/pavilion.

1.2 RELATED SECTIONS

- (a) Earthwork
- (b) Cast-In-Place Concrete

1.3 REFERENCES

- (a) American Institute of Steel Construction (AISC)
- (b) American Iron and Steel Institute (AISI) Specifications for Cold Formed Members.
- (c) American Society of Testing of Materials (ASTM)
- (d) American Welding Society (AWS)
- (e) OSHA Steel Erection Standard 29 CFR 1926.750 Part R
- (f) Steel Structures Painting Council (SSPC-SP2) as outlined in AISC 6.5

1.4 SYSTEM DESCRIPTION

- (a) Design Loads: IBC (2006 edition) 15 pounds per square foot snow load, 140 mile per hour wind speed on frame, 90 mile per hour with fabric top on (wind speed as determined by ASCE -7 and 3 second wind gusts), exposure "C", seismic zone 4.
- (b) Column to footing connection in compliance with OSHA Steel Erection Standard 29 CFR 1926.750 Part R.
- (c) Design Method: per applicable building code. Note: Manufacturer to use three-dimensional structural analysis to determine member load and forces.
- (d) The pre-engineered package shall be shipped as a pre-cut and pre-fabricated package that shall include the structural frame members, roof material, and fasteners as well as the installation instructions. The structure shall be shipped knocked down for minimum shipping charges. Field labor will be kept to a minimum by pre-manufactured parts. No onsite welding shall be permitted. Connection bolts shall be concealed within the tubing where possible. The fabric top must be easily removed or installed using integral tensioning devices.

1.5 SUBMITTALS

- (a) Submit [4] sets shop drawings and 2 sets structural calculations signed and sealed by a Professional Engineer licensed in the State of [VA].
- (b) Structural calculations shall show the following code information: Building Code IBC, 2006 edition, 30 psf snow or live load, 100mph wind speed.

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1.6 QUALITY ASSURANCE:

Provide evidence of commitment of quality craftsmanship as demonstrated by the following:

A. SUPPLIER QUALIFICATIONS:

1. The product shall be designed and produced at a facility owned and directly supervised by the supplier. The product shall be shipped from a single source.
2. The supplier shall have been making steel frame pre-manufactured shelters for a minimum of five years.
3. Membership in American Institute of Steel Construction.
4. Membership in American Welding Society.
5. Membership in Industrial Fabrics Association International.
6. Full time on-staff licensed engineer.
7. Full time on-staff quality control manager.
8. Published quality assurance manual.
9. Full time on-staff AWS certified welding inspectors.
10. Continued certification by an independent inspection agency.

B. CERTIFICATIONS

1. City of Los Angeles (California) fabricator approval number.
2. City of Houston (Texas) fabricator approval number.
3. City of Riverside (California) fabricator approval number.
4. City of San Bernardino (California) fabricator approval number.
5. County of Clark County (Nevada) fabricator approval number.
6. Welder certificates and AWS welding inspector certificates.

1.7 DELIVERY AND STORAGE:

Unload materials with necessary equipment (no hand unloading), store covered out of weather, and keep out of direct sun. Inspect parts within 48 hours of delivery, compare with manufacturer's bill of material, and report any missing or non-conforming parts to manufacturer within this time.

1.8 WARRANTY:

Supply manufacturer's limited five-year warranty.

PART 2. PRODUCTS

2.1 MODEL NUMBER: FCL 08x24 - 3

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2.2 ACCEPTABLE MANUFACTURER

- (a) PARASOL™, a product of PorterCorp, Holland, Michigan, (616) 399-1963. Receive pricing from local sales office at 301-408-2135.- **OR APPROVED EQUAL**
- (b) Alternate suppliers must meet the qualifications and provide proof of certifications listed under paragraph 1.6.

2.3 MATERIALS

- (a) Structural framing: structural steel tube minimum wall thickness per ASTM A500 grade B. Structural steel tube electric-resistance-welded per ASTM A513. Structural steel carbon content per ASTM A569. "I" beams, tapered columns, open channels, or wood products shall not be accepted.
- (b) Compression ring: structural channel or welded plate minimum ASTM A36.
- (c) Fasteners: ASTM A325 high strength bolts and A563 high strength nuts, ASTM A307 anchor bolts, self-drilling screws, rivets.

Fabric roof shall be made from HDPE (high density polyethylene), have UV inhibitors, rachel knitted, meet ASTM E84-01 "standard test method for surface burning characteristics of building interiors" (NFPA 255, ANSI/UL 723 and UBC B-1), and meet NFPA 701 "standard methods of fire tests for flame-resistant textiles". Fabric top thread shall be UV Resistant bonded polyester utilizing the lockstitch sewing method. Fabric top tensioning cable shall stainless steel. Fabric top shall be easily removed and installed with PARASOL™ telescoping devices.

2.5 FABRICATION

- (a) All base plates, stiffener plates, tensioners, and end plates shall be factory welded into place and bolt connection holes shall be factory cut.
- (b) Welded connections shall be made by certified welders in accordance with AWS Specifications and be supervised by an AWS certified welding inspector.
- (c) Factory frame finish: Powder Coating: Powder coated per the following procedure: Structural members are put through a three stage phosphate wash system and sealer. A finish coating of super durable TGIC polyester powder coat is applied, 3 – 7 mils in thickness, and cured to accomplish heat fusion. All material shall be inspected to insure 100% coating, adhesion, proper cure, film thickness and gloss. Color to be white or upgraded and selected from the manufacturer's standard color chart:

PART 3. EXECUTION

- (a) In accordance with OSHA Steel Erection Standard 29 CFR 1926.750 Part R: Anchor bolts, supplied by other than the manufacturer, shall be attached to the top of the concrete using four anchor bolts per column (as specified by the manufacturer). The shelter shall be set on prepared

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footings or concrete slab to be provided by others. Footing details are provided by PARASOL™ to install the structure in a worst case load and soil condition. In an effort to reduce foundation costs, the foundation can be re-designed by a local engineer (retained by other than the manufacturer) using data based on load information as provided by the manufacturer. Foundation will be constructed to local codes, and using good construction practices for the specific site conditions.

- (b) Install according to manufacturer's installation instructions and these specifications.
- (c) Remove fabric top when wind speeds are expected to exceed 90 mph.
- (d) When unloading, pad forks and use other precautions to protect powder coat finish. (Do not use chains or buckets to move materials.) Field handle carefully to avoid scratching powder coat finish. Before installing fabric top, clean steel and touch up scratches and chips in powder coat finish using touch up paint from manufacturer.

END OF SECTION